IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A lithographic apparatus comprising:

an illumination system that provides a projection beam of radiation;

a support structure that supports a patterning structure, the patterning structure configured to impart the projection beam with a pattern in its cross-section;

a substrate support that supports a substrate;

a projection system that projects the patterned beam onto a target portion of the substrate;

a base frame that supports at least one of the support structure and the substrate support; and

a reference frame that provides a reference surface with respect to which a position of at least one of said substrate and said patterning structure is measured, the reference frame being dynamically isolated from the base frame,

wherein said reference frame comprises a material having a coefficient of thermal expansion of greater than about 2.9×10^{-6}/K.

2. (Original) A lithographic apparatus according to claim 1, wherein said reference frame supports a measuring system to determine the position of at least one of said substrate and said patterning structure prior to exposure.

3. (Original) A lithographic apparatus according to claim 2, wherein said measuring system determines the difference between the position of the reference frame with respect to the substrate table or the support structure, respectively, and the position of the reference frame with respect to the projection system or illumination system, respectively.

4. (Original) A lithographic apparatus according to claim 1, wherein the beam of radiation has a wavelength of about 348 nm.

5. (Original) A lithographic apparatus according to claim 1, wherein the beam of radiation has a wavelength of less than about 348 nm.

6. (Original) A lithographic apparatus according to claim 1, wherein said reference frame supports said projection system.

7. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises at least one material from the group consisting of: aluminium, aluminium alloy, titanium, iron, cast-iron, steel, stainless steel, copper, a ceramic material, concrete, granite, and porcelain.

8. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises a composite, sandwich, or laminated structure.

9. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises a monolithic block of material.

10. (Original) A lithographic apparatus according to claim 9, wherein said monolithic block is machined to form said reference frame.

11. (Original) A lithographic apparatus according to claim 1, wherein said reference frame is connected to a cooling device to control the temperature of said projection system with respect to said reference frame.

12. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises a highly infrared reflective surface.

13. (Original) A lithographic apparatus according to claim 12, wherein said surface is provided by a coating of a metal.

14. (Original) A lithographic apparatus according to claim 13, wherein said metal comprises nickel.

15. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises a material having a specific heat of greater than about 600 J/(kg.K).

16. (Original) A lithographic apparatus according to claim 1, wherein said reference frame comprises a material having a thermal conductivity of greater than about 20 W/(m.K).

17. (Original) A lithographic apparatus according to claim 1, further comprising a vibration isolation system connected to said reference frame.

18. (Original) A lithographic apparatus according to claim 17, wherein said vibration isolation system comprises at least one airmount.

19. (Original) A lithographic apparatus according to claim 17, further comprising a base frame to support said vibration isolation system.

20. (Currently Amended) A reference frame for use in a lithographic apparatus, the lithographic apparatus comprising a base frame that supports at least one of a patterning structure and a substrate, the reference frame comprising a material having a coefficient of thermal expansion of greater than about 2.9×10^{-6}/K, wherein in use, the reference frame is dynamically isolated from the base frame.

21. (Original) A reference frame according to claim 20, wherein said reference frame comprises a material having a specific heat of greater than about 600 J/(kg.K).

22. (Original) A reference frame according to claim 20, wherein said reference frame comprises a material having a thermal conductivity of greater than about 20 W/(m.K).

23. (Currently Amended) A device manufacturing method comprising:

providing a beam of radiation;

patterning the beam of radiation;

projecting the patterned beam of radiation onto a target portion of a substrate, the substrate being supported by a base frame;

providing a reference frame comprising a reference surface, the reference frame comprising a material having a coefficient of thermal expansion of greater than about 2.9×10^{-6}/K, the reference frame being dynamically isolated from the base frame; and

measuring a position of the substrate with respect to the reference surface.